

ABSTRACT

Monitoring of Micro Hydro Power Plants (MHP) needs to be done to monitor the electricity produced. The problem is that officers have difficulty monitoring at any time because the location of the MHP is in a rural area and has a large area so it is difficult to reach. Plus if there is more than one MHP that must be monitored, it will add time and energy just to monitor directly. Therefore we need a monitoring system of MHP in real-time from a distance to monitor the electricity generated and the rotation speed of the turbine and then the data is displayed on a website. So that officers do not need to go too often to the location to monitor the MHP. This system uses LoRa (Long-Range) technology to reach rural areas and the XMPP (Extensible Messaging and Presence Protocol) protocol to forward data to the server. A series of experiments were carried out to test the performance of the system and it was found that LoRa can send data up to 980 meters in SF12 with a PDR of 12% and PER 100%. The lower the Spreading Factor and the higher the payload, the greater the throughput.

Keywords: lora, xmpp, micro hydro power plants